



City Research Online

City, University of London Institutional Repository

Citation: Richer, S., Huntjens, B. ORCID: 0000-0002-4864-0723, Pratt, S., Rutledge, G., Perry, B., Novil, S. and Pratt, G. (2017). Is macular pigment spatial profile a clinical biomarker in children of AMD parents?. *Acta Ophthalmologica*, 95(S259), doi: 10.1111/j.1755-3768.2017.02164

This is the accepted version of the paper.

This version of the publication may differ from the final published version.

Permanent repository link: <https://openaccess.city.ac.uk/id/eprint/25427/>

Link to published version: <http://dx.doi.org/10.1111/j.1755-3768.2017.02164>

Copyright and reuse: City Research Online aims to make research outputs of City, University of London available to a wider audience. Copyright and Moral Rights remain with the author(s) and/or copyright holders. URLs from City Research Online may be freely distributed and linked to.

City Research Online:

<http://openaccess.city.ac.uk/>

publications@city.ac.uk

European Association for Vision and Eye Research Conference (EVER) abstract 2017

Title:

Is macular pigment spatial profile a clinical biomarker in children of AMD parents?

Authors:

Stuart Richer ¹

Byki Huntjens ²

Steven Pratt ³

Grant Rutledge ^{3, 4}

Blake Perry ^{3, 5}

S Novil ³

Gunilla Pratt ³

¹ Eye Clinics, Captain James A Lovell Federal Health Care Center, North Chicago IL, USA

² Applied Vision Research Centre, School of Health Sciences, City, University of London, UK

³ Scripps Health/Scripps Memorial Hospital/Scripps Mericos Eye Institute - Scripps Clinical Research Service, La Jolla CA, USA

⁴ Department of Ecology and Evolutionary Biology, University of California, Irvine CA, USA

⁵ Department of Ophthalmology, University of Iowa, Iowa City IA, USA

Abstract

A central dip in macular pigment (MP) has shown to be more prevalent with age, in AMD patients, and in smokers. We investigated clinical and genetic biomarkers in non - smoking children of AMD parents (n = 131) over 40 years of age without AMD pathology in relation to their MP spatial profile. MP peak and volume were obtained with ARIS (Visual Pathways, Inc, Prescott, AZ USA) while spatial profiles for both eyes were classified visually and objectively. We explored risk factors including serum carotenoids and in - vivo skin carotenoids, and cardiovascular biomarkers including omega - 3 fatty acids EPA and DHA, methylenetetrahydrofolate reductase C677T and A1298C in this well - nourished Caucasian study group. Objectively, a central dip appeared more prevalent in children of AMD patients (41%) when compared to a healthy population. Those with central dip showed increased mean MP peak and volume, decreased serum L, Z, EPA and DHA, and decreased skin carotenoids in comparison to no dip. Identifying biomarkers in children genetically susceptible to AMD and introducing lifestyle changes such as nutrient repletion could provide invaluable advice to those associated with increased risk of AMD.